## REMARKS

Applicant respectfully requests reconsideration. Claims 52-77 were previously pending in this application. No new matter has been added.

***Objection under 37 CFR 1.75(c)***

Claim 64 continues to be objected to under 37 CFR 1.75(c) as being of improper dependent form. According to the Examiner, since the claim is to a composition, "the route of administration has no patentable weight on the structure of the composition". Applicant respectfully traverses. The claim recites that the "the composition is formulated for administration by an intravenous or intraperitoneal route". The route of administration limits the *formulation* of the composition, and such *formulation* limits the composition. Those of ordinary skill will recognize that the *form* or *structure* of a composition can vary based on its intended route of administration. A formulation for intravenous administration implies certain physical or structural attributes. Similarly a formulation for intraperitoneal administration implies certain physical or structural attributes. The formulation of a composition (for particular routes of administration) has patentable weight. Claim 64 is not of improper dependent form and reconsideration and withdrawal of this objection is respectfully requested.

***Rejection under 35 U.S.C. §112***

*Written Description*

Claim 54 continues to be rejected under 35 U.S.C. §112, first paragraph, written description. According to the Examiner, the phrase "wherein the CpG is not part of a 6 base palindromic sequence" is a new subgenus that is not supported by the specification. Applicant respectfully traverses on the basis that the specification clearly describes immunostimulatory oligonucleotides comprising a CpG dinucleotide that is not part of a 6 base palindrome. See page 13 lines 32-38. As stated previously, one of ordinary skill in the art would readily envision the structural features of these oligonucleotides, particularly in view of the cited passage. Moreover, the specification provides various of these oligonucleotides including ODN 1, 1c, 1d, 2, 3D, 3Da, 3Db, 3De, 3Dg, 3M, 3Md, and 3Me. See pages 14 and 15, Table 1. The specification further identifies TGACGTT/C as an optimal CpG motif. The CG dinucleotide in

one version of this motif (i.e., TGACGTT) is not part of a 6 base palindromic sequence. The specification, and not the claim, provides the basis and support for this "subgenus" of oligonucleotides. The subgenus is not "new" and the claim does not recite new matter.

Reconsideration and withdrawal of this rejection is respectfully requested.

***Rejection under 35 U.S.C. §102***

Claims 52-61 and 63-64 are rejected under 35 U.S.C. §102 as being anticipated by U.S. Patent No. 5,723,335 (Hutcherson et al.). Applicant respectfully traverses.

Hutcherson et al. teaches that oligonucleotides having at least one phosphorothioate internucleotide linkage are immunostimulatory by virtue of this backbone modification. Hutcherson et al. does not teach that oligonucleotides are immunostimulatory by virtue of a CG dinucleotide.

The Examiner has relied on the teaching in Hutcherson et al. of three specific antisense oligonucleotides that have one or more phosphorothioate internucleotide linkages and that happen to contain one or more CG dinucleotides (i.e., SEQ ID NO:1, 2 and 3). Hutcherson et al. does not recognize that the CG dinucleotides may be imparting activity to the three disclosed oligonucleotide analogs. Rather, Hutcherson et al. teaches repeatedly that the immunostimulatory effects result from the one or more phosphorothioate linkages in these and other oligonucleotides. Moreover, Hutcherson et al. does not formulate any of these oligonucleotides with liposomes or cationic lipids. See for example col. 10 lines 14-16 which teaches that the buffer control contains sodium acetate and sodium chloride. The compositions of these oligonucleotides do not contain liposomes or cationic lipids and therefore these specific compositions do not anticipate the rejected claims.

The Examiner points out that Hutcherson et al. further teaches that "liposomes and cationic lipids can significantly enhance the uptake and fate of oligonucleotides and analogs". This teaching however is made in the context of phosphorothioate oligonucleotide analogs and not in the context of CG-containing oligonucleotides. One of ordinary skill would not make a composition comprising a CG-containing oligonucleotide together with a liposome or cationic lipid based on this teaching. Hutcherson et al. does not teach an immunostimulatory CpG

containing oligonucleotide associated with a lipid or a sterol, and it therefore does not anticipate the rejected claims.

Reconsideration and withdrawal of this rejection is respectfully requested.

***Rejection under 35 U.S.C. §103***

Claim 62 is rejected under 35 U.S.C. §103(a) as being anticipated by U.S. Patent No. 5,723,335 (Hutcherson et al.) in view of U.S. Patent No. 5,703,055 (Felgner et al.). Applicant respectfully traverses.

A prima facie case of obviousness has not been made because there is no motivation to combine the references, no reasonable expectation of success relating to such combination, and the combination does not yield every limitation of the pending claims.

Hutcherson et al. teaches immunostimulatory oligonucleotides having at least one phosphorothioate internucleotide linkage. Hutcherson et al. teaches that it is the presence of the one or more phosphorothioate internucleotide linkages that imparts immunostimulatory activity to these oligonucleotides. Hutcherson et al. does not teach the genus of CG-containing oligonucleotides. Felgner et al. does not teach this genus of oligonucleotides either. The combination of Hutcherson et al. and Felgner et al. therefore does not yield each and every limitation of claim 62, as the combination does not lead one of ordinary skill in the art to an appreciation of the immunostimulatory capacity of a CG dinucleotide, nor to the genus of CG containing oligonucleotides.

In addition, there is no motivation to combine Hutcherson et al. and Felgner et al. at least because the oligonucleotide analogs of Hutcherson et al. must comprise at least one phosphorothioate internucleotide linkage and the nucleic acids of Felgner et al. encode proteins. Nucleic acids having phosphorothioate linkages are generally not used to encode proteins because the transcriptional machinery of the cell has evolved to recognize and transcribe naturally occurring DNA (i.e., having a phosphodiester backbone) and not nucleic acids with modified backbones. Nucleic acids having phosphorothioate backbone modifications are more commonly used for example as antisense sequences since the backbone modification functions to promote their stability (and thus increase their half-life). For at least these reasons, one of ordinary skill in the art would not have been motivated and would not have had a reasonable

expectation of success of introducing the backbone modifications of Hutcherson et al. into the antigen-encoding nucleic acids of Felgner et al. For at least these reasons, a *prima facie* case of obviousness has not been made.

Reconsideration and withdrawal of this rejection is respectfully requested.

## CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

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Respectfully submitted,

By _____

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